



CLINICAL PATHWAYS – INTRODUCTION

Clinical Pathways are guidelines used to assist in the delivery of high-value, effective, efficient, safe, and family-centered care. Pathways have been shown to improve the quality of care for hospitalized children with many conditions and in different settings (1)

A definition of a clinical 'pathway' needs to satisfy four criteria (2)

- (1) It is a structured multidisciplinary plan of care.
- (2) It is used to translate guidelines or evidence into local practices.
- (3) It details the steps in a course of treatment of care in a plan, pathway, algorithm, guideline, protocol, or other "inventory of actions."
- (4) It is aimed to assist in standardizing care of a specific population.

These Clinical Decision-Support (CDS) tools are aimed to assist clinicians at the bedside to deliver evidence-based care. The **Algorithm (SECTION 2)** is a visual aid that helps guide clinicians, step-by-step through the timing, indications, and details of recommended tests and treatments for managing specific conditions. In this case, **Non-Accidental Trauma** is being addressed.

These PATHWAYS and their specific SECTIONS were developed by a consensus of a subject-matter-expert (SME) team, organized by the Clinical Effectiveness and Pathways (CEP) program at Nicklaus Children's Health System (NCHS). The SME team included clinicians from multiple disciplines and pediatric sub-specialties (see SECTION 7).

These clinical pathways are intended to be used as a compilation of best practice recommendations for practitioners. The practice of evidence-based pediatric medicine involves the use of pathways, the clinicians' experiences and judgment, and finally the patient's perspectives and values.

However, these clinical pathways are not intended to constitute specific medical recommendations for treatment. The practitioners must exercise their own independent judgment in applying these tools. These clinical pathways are not a script or 'cookbook' applicable to all patients. NCHS cannot certify that CDS documents are accurate or complete in every aspect. NCHS is not responsible for any errors or omissions in the use of clinical pathways or for any outcomes a patient might experience where a clinician consulted or followed these CDS in providing clinical care.

1-Rising utilization of inpatient pediatric asthma pathways. Kaiser SV, et al. J Asthma. 2017.

2-Lawal AK RT, Kinsman L, Machotta A, Ronellenfitch U, Scott SD, Goodridge D, et al. What is a clinical pathway? Refinement of an operational definition to identify clinical pathway studies for a Cochrane systematic review. BMC Med 2016;14)

Suspected Non-Accidental Trauma (NAT) Identification and Management

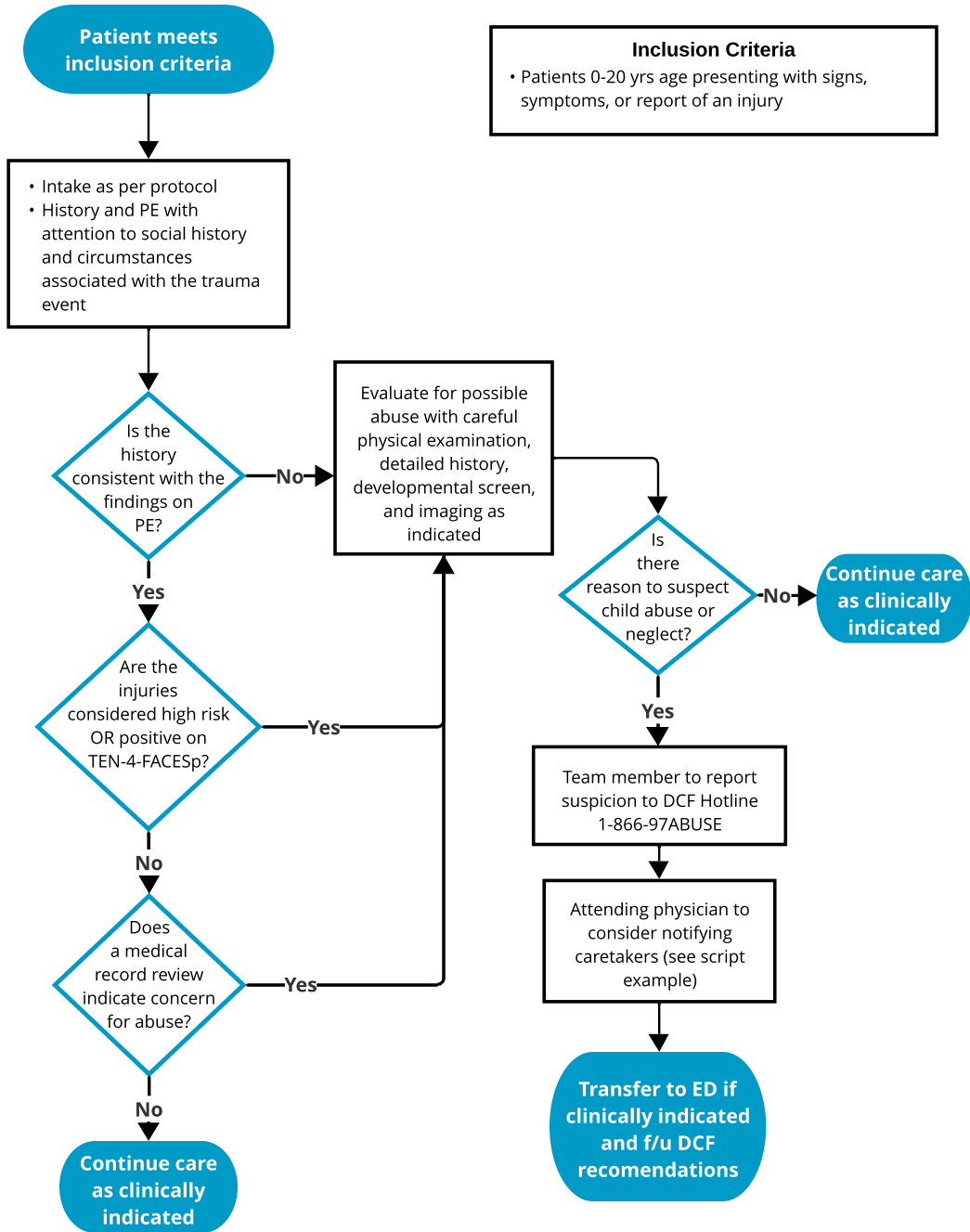
UCC Phase



Nicklaus Children's Health System

• Any person suspicious of abuse or neglect is required by law to report to DCF
 • The social worker is not to report the suspicion of other team members to DCF

Inclusion Criteria
 • Patients 0-20 yrs age presenting with signs, symptoms, or report of an injury



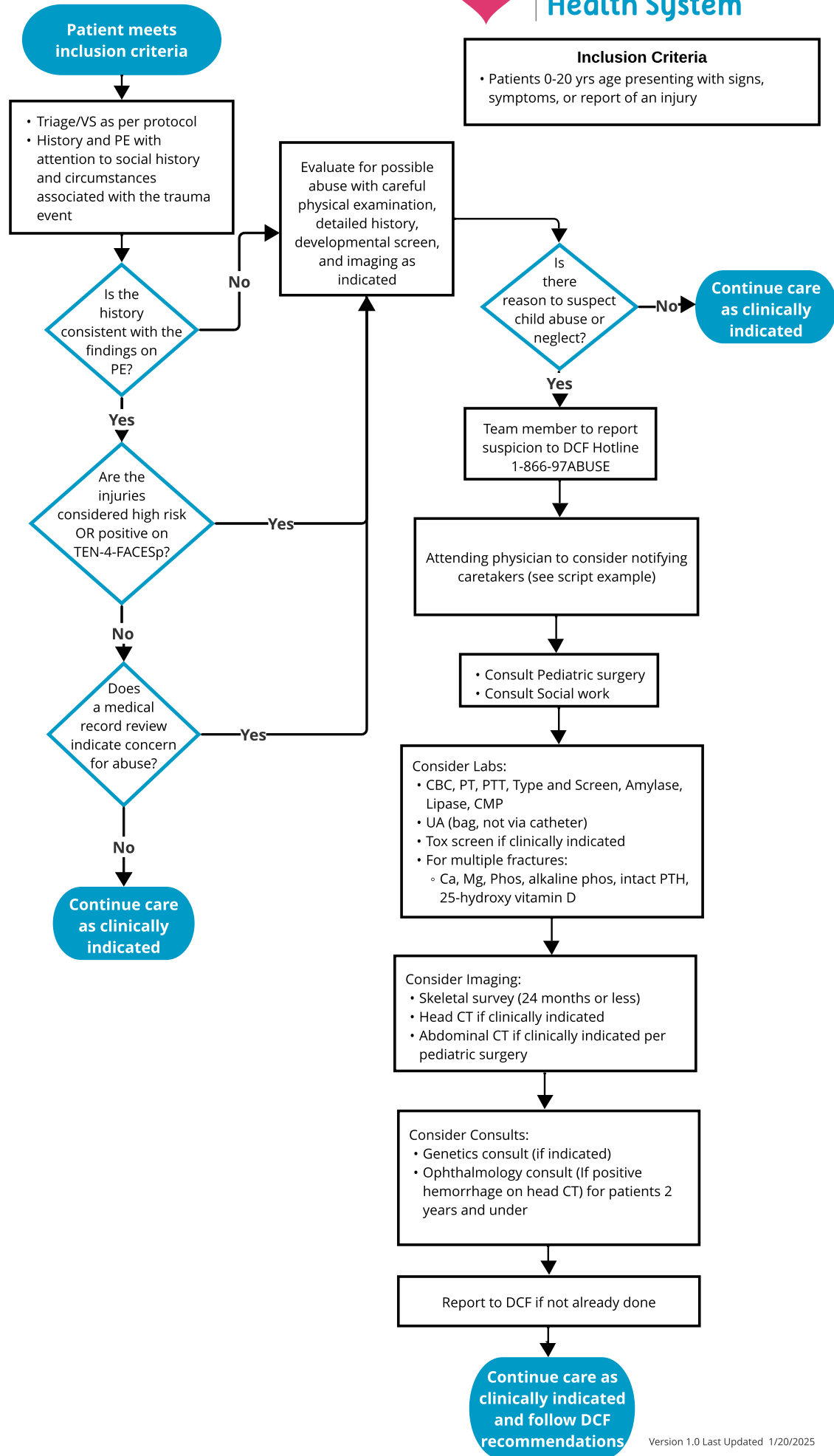
Suspected Non-Accidental Trauma (NAT) Identification and Management

• Any person suspicious of abuse or neglect is required by law to report to DCF
 • The social worker is not to report the suspicion of other team members to DCF

ED/Inpatient Phase



Nicklaus Children's Health System



Inclusion Criteria

- Patients 0-20 yrs age presenting with signs, symptoms, or report of an injury

Continue care as clinically indicated

Continue care as clinically indicated

Continue care as clinically indicated and follow DCF recommendations

High Risk Conditions






- Patterned bruising
- Bruising in non-ambulatory infants
- Bruising to the head, neck, face, abdomen, buttocks
- Multiple bruising
- Patterned burns
- Burns consistent with water immersion
- Multiple burns of different ages
- Failure to thrive without chronic disease and any injury
- Head trauma in children less than 6 months of age
- Intracranial bleeding after minor head trauma
- Subdural bleeding without medical or known traumatic cause
- Multiple fractures not consistent with history provided
- Multiple fractures of different ages/stages of healing
- Metaphyseal fractures
- Rib fractures without history of major injury
- Scapular fracture
- Spinous process fracture
- Sternal fracture without history of significant injury
- Epiphyseal separations
- Vertebral body fractures and subluxations
- Digital fractures in infants and young children
- Complex skull fracture
- Femur or Humerus fracture in non-ambulatory infant
- Spiral fracture of the femur without consistent history
- Retinal hemorrhage (may be normal in newborn)
- Oral injury in the infant, frenulum injury
- Genital injury without consistent history or trauma



TEN-4-FACESp

Bruising Clinical Decision Rule for Children < 4 Years of Age

<p>— TEN — Torso Ears Neck</p>  <p>— FACES — Frenulum Angle of Jaw Cheeks (<i>fleshy part</i>) Eyelids Subconjunctivae</p>	<p>4 months and younger</p>  <p>Any bruise, anywhere</p>	<p>Patterned bruising</p>  <p>Bruises in specific patterns like slap, grab or loop marks</p>
REGIONS	INFANTS	PATTERNS

When is bruising concerning for abuse in children < 4 years of age?

If bruising in any of the three components (Regions, Infants, Patterns) is present without a reasonable explanation, strongly consider evaluating for child abuse and/or consulting with an expert in child abuse.

TEN-4-FACESp is not to diagnose abuse but to function as a screening tool to improve the recognition of potentially abused children with bruising who require further evaluation.



Any time a child of this age comes to the hospital with (this injury/these injuries), we evaluate for other injuries. Sometimes a child can have internal injuries, such as broken bones, a head injury, or abdominal injury that we cannot see on the outside. Just like you, we want to make sure that your child is ok, so it is important that we do this testing. These tests include (provide test names). As part of this evaluation, we will also have our social worker come talk with you. By law, we are obliged to report any concern for abuse to Florida Department of Children and Family. This is a standard part of our evaluation. We are happy to answer any questions or concerns along the way.

ADD REFERENCE



References

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2. Naik-Mathuria, Bindi & Akinkuotu, Adesola & Wesson, David. (2015). Role of the surgeon in non-accidental trauma. *Pediatric surgery international*. 31. 10.1007/s00383-015-3688-x.
3. Pediatric Central Nervous System Imaging of Nonaccidental Trauma: Beyond Subdural Hematomas
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4. Pediatric ophthalmology inpatient consults at a tertiary care children's hospital
Gautam, Natasha et al. *Journal of the American Association for Pediatric Ophthalmology and Strabismus (JAAPOS)*, Volume 27, Issue 2, 75.e1 - 75.e5
5. Pierce MC, Kaczor K, Lorenz DJ, et al. Validation of a Clinical Decision Rule to Predict Abuse in Young Children Based on Bruising Characteristics. *JAMA Netw Open*. 2021;4(4):e215832. doi:10.1001/jamanetworkopen.2021.5832
6. Riney et al (2018). "Standardizing the Evaluation of Nonaccidental Trauma in a Large Pediatric Emergency Department." *Pediatrics*. 141(1): e20171994.
7. Schermerhorn SMV, Muensterer OJ, Ignacio RC Jr. Identification and Evaluation of Non-Accidental Trauma in the Pediatric Population: A Clinical Review. *Children (Basel)*. 2024 Mar 30;11(4):413. doi: 10.3390/children11040413. PMID: 38671630; PMCID: PMC11049109



Trauma

1. Completion of skeletal survey for patients 24 months or less
2. Pediatric surgery consult
3. Social work consult
4. Ophthalmology consult for positive ICH on head CT

ICD-10 Codes

- Nonaccidental injury (T14.90)
- Nonaccidental injury to child (T74.92XA)
- Nonaccidental traumatic injury (Y09)
- Nonaccidental traumatic head injury in child (T74.12XA)

[Return to UCC Phase](#)

[Return to ED Phase](#)

[Return to Inpatient Phase](#)

[Approval and Citation](#)



CLINICAL EFFECTIVENESS / PATHWAYS PROGRAM

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Nursing Research/EBP: Alexa Parra
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Executive Approval

Marcos Mestre: SVP and Chief Clinical Operations Officer

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